ADEC Water Quality Monitoring
Tier 2 Quality Assurance Project Plan (QAPP) Review Checklist

The applicant must develop a QAPP for use in a proposed monitoring project. The QAPP will be used by all parties involved in the monitoring project as a road map to collecting valid monitoring data. Failure to follow the provisions in the QAPP may likely result in the invalidation of monitoring data and may result in the requirement for additional monitoring. Responsibility for conducting field monitoring, laboratory and data analysis in compliance with the QAPP rests with the respective project managers for sampling, laboratory and data analysis (Note: this responsibility extends to any contracted field monitoring, lab or data analysis vendor). Responsibility for diligent project oversight rests with the lead project manager/organization.

Project Title: _____ Date: _____

Reviewed By: _____ Date: _____

ELEMENT	STATUS	COMMENTS
A. Project Management Elements		
Each page of document numbered and includes revision date and document title		
1. Title and Approval Sheet		
Title		
Organization's name(s) implementing project		
Effective date of plan		
Printed name and dated signature of Organization's Project Manager		
Printed name and dated signature of Organization's Project QA Officer/Manager (if organization not ADEC DOW)		
Printed name and dated signature of ADEC DOW QA Officer		
Printed name and dated signature if ADEC DOW Project Manager		
2. Table of Contents		
Table of contents follows 24 Element format		
3. Distribution List		
In table format list name, person's job title, organization, email, and phone # of all who receive the approved QAPP and subsequent revisions (e.g., Project Manager, Project QA Officer, DEC Project Manager, DEC QA Officer, Laboratory Project Manager or contact, lead field sampler(s), and others involved with the sampling as needed)		
4. Project/Task Organization		
In table format, identify key individuals and their responsibilities: (data users, decision-makers, project manager, project QA officer, ,laboratory manager, lead sampling supervisor, contractor/s, subcontractor/s, etc.)		
Organizational chart showing: 1) line of management authority, 2) line of data reporting responsibility (this includes relevant sampling and/or lab contractors/sub contractors), and 3) independent line of quality assurance authority		
5. Problem Definition/Background and Project Objective/s		
Clearly states problem(s) and/or decision(s) to be resolved		
Provides sufficient historical, background and regulatory perspective relevant to the proposed monitoring project. If previous monitoring data exists, results are summarized and made relevant to proposed monitoring project.		

ELEMENT	STATUS	COMMENTS
Provides overall objective(s) for study		
6. Project/Task Description (SUMMARY ONLY)		
Lists measurements to be made (in Table format)		
Briefly describe monitoring location/s		
Provide large scale introductory map showing relevant region of AK and overall monitoring/sampling locations.		
Lists sampling locations/frequency (in Table format)		
Are special personnel or equipment requirements necessary?		
Provides work schedule for implementation of project tasks (in Table format)		
Summarizes required project & QA records/reports (in Table format)		
7. Quality Objectives and Criteria for Measurement (in table format as possible)		
States overall Data Quality Objectives (DQOs). References applicable regulatory/guidance documents (Alaska Water Quality Standards, etc.) governing DQOs.		
States and characterizes Measurement Quality Objectives (MQOs) as to applicable action levels or criteria for each parameter measured (precision, bias, comparability, detectability (mdl and pql) and data completeness) in Table format. Provides appropriate definition and algorithms for each. Note: Representativeness to be fully characterized in section B1, Sampling Process Design. (Note: See examples in, *Elements of a Tier 2 Water Quality Monitoring QAPP*).		
Included in MQO table for each measurement parameter the applicable numeric Alaska Water Quality Standard (e.g., recreational/drinking water, aquatic life fresh water, etc).		
8. Special Training Requirements/Certification Listed		
In table form**at i**dentifies specific training and/or certifications for key personnel and how/when it will be provided, documented, and assured. Identifies location where records will be maintained.		
9. Documentation and Records (in table format as possible)		
Itemizes all documents and records to be produced (interim progress reports, final reports, audits, QAPP revisions, etc.		
Lists information to be included in specific types of reports (e.g., field reports, lab reports, QA reports, DMR (permitted facilities only), etc). Examples are: • Final report – Summaryfield reports, lab reports, • Field reports – field logs, field equipment calibrations, QC checks. • Lab reports – sample receipt log, sample prep and lab analysis logs, instrutment printouts, sample results, results of QC checks, sample result summary, etc. • QA reports – Performance Evaluation (PE) Sample Reports, DMRQA, field audit reports, lab audit reports, data audit reports.		
States requested lab turnaround time, if applicable		
Identifies written and electronic (CD/DVD/email) data reports to be provided to ADEC		
Gives retention time and storage location of records and reports		
B. Measurement and Data Acquisition		
1. Sampling Process Design (in table format when possible)		
Provides a clear rational for monitoring project design and assumptions used to develop the design.		
Defines the parameters to be measured		
Defines the type and number of samples required		

ELEMENT	STATUS	COMMENTS
Defines when, where, and how samples will be collected		
Identifies sampling locations and frequency		
Uses photos to characterize sampling locations (photos should be included either in the QAPP if known prior and/or in final report-4 cardinal directions or others as appropriate.)		
Characterizes sampling locations (include detail map/s of local project area identifying sample sites, topographic/bathymetric map of area if available, , site specific latitude and longitude, GPS coordinates, etc.).		
Provides site specific GPS coordinates, latitude and longitude, altitude.		
Defines appropriate validation study for non-standard situations		
2. Sampling Methods Requirements (in table format)		
Identifies specific sample collection procedures and methods. (Includes equipment preparation and decontamination, sample containers and sample volumes). Demonstrates compliance with appropriate referenced method/s.		
For each parameter/method describes applicable sample preservation methods, maximum holding times and temperatures (table format). See example in section *B3, Elements of a Tier 2 Water Quality Monitoring QAPP*		
Specifies calibration procedures for field measurements.		
Applicable field measurement SOPs and operator Manuals are referenced and located in QAPP appendices.		
3. Sample Handling and Custody Requirements		
Describes sample handling, labeling, collection and transportation requirements.		
Notes chain-of-custody procedures, if required. Appropriate chain-of-custody forms are referenced in the QAPP appendices.		
4. Analytical Methods Requirements (in table format)		
Identifies specific analytical methods to be followed. Identifies required equipment and compliance with appropriate method name and reference number (e.g., fecal coliform, 9222D Standard Methods 20 edition). This section provides more detail than in section A7 MQOs..		
Lists method detection limits (mdl) and practical quantification limit (pql) for each analytical method and provides procedure/algorithm on how pql determined.		
Specifies calibration and maintenance procedures. Identifies performance requirements. For laboratories, a current signed approved QAPP can be referenced if on file with ADEC DOW.		
Applicable SOPs and QA Manuals are referenced and located in QAPP appendices.		
5. Quality Control Requirements (in Table format)		
Lists Quality Control requirements for field measurements. Identifies QC procedures and frequency, acceptance criteria limits, corrective actions, and standards traceability for each measurement technique. Examples of QC sample measurements and criteria are: duplicate/replicate precision measurements, field blanks, and QC "calibration" check standards, **This information to be provided as much as possible in table format**. See example in section *B5, Field Quality Control Samples, Elements of a Tier 2 Water Quality Monitoring QAPP*		
Lists Quality Control requirements for field sample collection with subsequent laboratory analysis. Identifies QC procedures and		

ELEMENT	STATUS	COMMENTS
frequency, acceptance criteria limits, corrective actions, and standards traceability for each sample analysis technique. Examples of QC samples and criteria are: field duplicate/replicate sample analysis, laboratory duplicate/replicate sample analysis, matrix spike duplicates, field blank samples, lab blanks, 3rd party QC samples (commercially prepared QC samples as verification for lab calibration standards, etc), calibration verification standards and continuing calibration verification standards. **This information to be provided as much as possible in table format.** See example in section *B5, Project Quality Control Samples, Elements of a Tier 2 Water Quality Monitoring QAPP*		
6. Instrument/Equipment Testing and Inspection and Maintenance Requirements (in table format). For laboratories, a current signed/approved QAPP can be referenced if on file with ADEC DOW (provide reference location).		
Identifies acceptance testing of sampling process and of field and lab measurement equipment/standards		
Describes equipment preventive and corrective maintenance		
Checklists and worksheets documenting testing, inspection, and maintenance are included in the QAPP appendices.		
7. Instrument Calibration and Frequency (in table format when possible). For laboratories, a current signed/approved QAPP can be referenced if on file with ADEC DOW. Please summarize as much of the information below in table format:		
Specifies calibration (frequency, range, control criteria, etc) for each instrument or piece of equipment needing calibration.		
Specifies calibration/certification/traceability (certification date, expiration date, range, accuracy, etc.) for calibration standards used and shows compliance with appropriate method.		
Specifies calibration standards and/or equipment		
Cites calibration records and manner traceable to equipment/instrumentation		
Calibration forms		
8. Inspection/Acceptance Requirements for Supplies and Consumables (presented in table format). For laboratories, a current signed/approved QAPP can be referenced if on file with ADEC DOW.		
States acceptance procedure and criteria for supplies & consumables		
States how and where records are kept		
Notes responsible individual(s)		
9. Data Acquisition Requirements for Nondirect Measurements (presented in table)		
Identifies type of data needed from nonmeasurement sources (e.g., computer databases, literature files, historical data bases, NOAA weather data, etc.), along with acceptance criteria for their use.		
Describes any limitations on use of such data		
10. Data Management (presented in table format when possible)		
Describes project data management process and traces path from sample collection and field measurements, lab analysis, data validation/verification, QA assessments and reporting of data of known quality to the respective ADEC Division of Water Program Office. It also shows and describes control mechanisms for detecting and correcting errors. **Include flow chart**. See example low chart in *section B10, Data Management, Elements of a Tier 2 Water Quality*		

ELEMENT	STATUS	COMMENTS
Monitoring QAPP.		
Describes standard record-keeping, including data storage and retrieval requirements		
Checklists or standard forms are included in QAPP appendices		
Describes data handling equipment and procedures used to process, compile, & analyze data		
C. Assessments and Oversight		
1. Types of Project Assessments & Response Actions (in table format). Indicate which type of assessment to be performed, at what frequency and number and the criteria used to ensure performance or effectiveness.		
Field/Sampling Audit – On-site audit of field sampling operations. Evaluate sampling process to ensure conformity with sample collection procedures specified in QAPP. **Note:** Audit may be scheduled/performed at discretion of DEC Project Manager/DEC Water QA Officer. Responsibility for conducting audit lies with DEC Project Manager/Water QA Officer.		
Provide documentation showing current DEC EH DW Certification for Microbiologicals of interest. **Note:** Laboratories analyzing microbiologicals in support of BEACH and/or ACWA Grant monitoring projects must have current DW certification for microbiologicals of interest. It is responsibility of laboratory to participate in (NELAC accredited 3rd party blind Performance Testing (PT) program as part of DEC EH DW certification. PT sample results must also be sent directly to DEC DOW QA Officer. For those microbiologicals not covered under the DW certification process, the laboratory needs to be participate a NELAC accredited PT program for microbiologicals of interest for water/wastewater (e.g., BEACH Grant – EPA approved fecal coliform and enterrococci method).		
For APDES monitoring projects, Permittee responsible to ensure laboratory conducting sample analyses participates in DMRQA blind PT sample for the analytes and mehods of interest.		
For projects comparing data results to federal/state WQ chemistry standards, -- the laboratory providing the analytical services needs to show proof of participation in 3rd party blind PT program for water/wastewater for methods of interest Results of PT samples to be sent directly to DEC DOW QA Officer.		
On-site audit of laboratory conducting analysis of project samples. Evaluate overall reliability of laboratory to analyze/report sample results per QAPP specified project criteria. **Note: On-site a**udit may be scheduled/performed at discretion of DEC Project Manager/DEC Water QA Officer. Responsibility for conducting audit lies with DEC Project Manager/Water QA Officer.		
Peer review of Data Quality - includes DEC review		
Corrective Action Report(s) and Corrective Action Response(s)		
QAPP Revisions – describes process to revise QAPP (if monitoring methods, criteria, or other elements change).		
2. Quality Assurance Reports to Management (in Table format)		
For the following QA reports describe the frequency, content, responsible position or individual for issuing each report and distribution of each to management and others (summarize in table format):		
Performance Testing Reports		

ELEMENT	STATUS	COMMENTS
On-Site Field Sampling Audits		
On-Site Laboratory Audits		
Peer Reviews		
Corrective Action Reports		
Response to Corrective Action Reports		
D. Data Validation and Usability		
1. Data Review, Validation, and Verification Requirements (in table format if possible)		
States method-specific criteria for accepting, rejecting, or qualifying data. Data Validation Tables summarizing these criteria should be referenced and may be located in QAPP appendices.		
Includes project-specific calculations or algorithms		
2. Validation and Verification Methods		
Describes process for data validation and how criteria will be used to validate, qualify and/or invalidate data. Include validation forms/checklists in the QAPP appendices.		
Describes process for data verification and how conclusions can be correctly drawn from the validated data. Include verification forms/checklists in the QAPP appendices.		
Identifies issue resolution procedure and responsible individual(s)		
Identifies method for conveying results to data users		
3. Reconciliation with User Requirements		
Describes process for reconciling project results with project objectives and reporting any limitations on use of data		

These elements, when adequately completed, meet the State and Federal QAPP requirements.
For further guidance see EPA QA/R-5 (http://www.epa.gov/r10earth/offices/oea/epaqar5.pdf), EPA QA/G-5 (http://www.epa.gov/r10earth/offices/oea/epaqag5.pdf) and Elements of a Water Quality Monitoring QAPP rev 1

✔ Acceptable- no other information needed.

Information must be changed or fixed.

✘ Not acceptable: major additions or changes required.

ⓘ Information is provided for benefit of applicant.

? Information is incomplete: some clarification is necessary.